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Connection of early stage smart investors with technology-based start-ups in innovation ecosystems

*9th TTO CIRCLE plenary meeting
26th & 27th May 2016*

Edited by:
Annarita Ferreri
Sergio Grande

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Foreword

The European TTO CIRCLE network was established in 2011 and brings together major European Public Research Organisations committed to advancing Technology Transfer in Europe and beyond. The TTO CIRCLE has 28 members, which includes the JRC of the European Commission, acting as coordinator and managing its secretariat. The network operates in close collaboration with other Directorates General of the European Commission and with EARTO, the European Association of Research and Technology Organisations.

The TTO CIRCLE organizes its activities around annual plenary meetings that offer its members an opportunity to discuss important and strategic technology transfer related issues. More technical meetings are also organized regularly to cover specific technical issues and to provide thought leadership on emerging issues.

This report summarises the key conclusions, proceedings and evaluation of the 9th TTO circle plenary meeting held in Donostia-San Sebastián on 26&27 May 2016. This meeting was organised by JRC in collaboration with TECNALIA.

All materials pertaining to this event, including speakers' presentations and background papers, are available at <https://ec.europa.eu/jrc/en/event/conference/9th-plenary-meeting-european-tto-circle>.

Acknowledgements

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Introduction

The 9th Plenary Meeting of the European Technology Transfer Offices (TTO) Circle took place in San Sebastian (Spain).

The 2 days meeting was structured in the following 3 main sessions:

- The first session **"Connection of early stage smart investors with technology-based start-ups in innovation ecosystems"** explored effective ways to connect early-stage venture capital and technology-based start-ups within and across European innovation ecosystems;
- The second session **"Synergies among EIT and TTOs strategies in technology-based start-up generation"** focused to identify European level actions that can be addressed jointly by KICs and TTOs to enhance effectiveness beyond what is being done by each of the entities in their scope.
- The third session **"Start-up creation and entrepreneurship"** explored the TTO circle members' initiatives in fostering start-up creation and entrepreneurship.

The meeting agenda and a list of participants can be found in the Annex I of this report.

Session 1: Connection of early stage smart investors with technology based start-ups in innovation ecosystems

Moderator

- **Luis SANZ**, Director-General, International Association of Science Parks and Areas of Innovation (IASP)

Speakers

- **Asier RUFINO**, Managing Director, TECNALIA Ventures
- **Brian GRAVES**, Director of Business Development, Imperial Innovations
- **Alvaro Simon DE BLAS**, Director, European Business & Innovation Centre Network
- **Douglas T. HICKEY**, Ambassador and Commissioner General of the USA Pavilion at Expo Milano 2015
- **Javier ECHARRI**, former Secretary-General at EVCA – European Private Equity and Venture Capital Association

Editor

- **Sergio GRANDE**, Technology Transfer Officer, Directorate-General Joint Research Centre, European Commission

Abstract

The goal of this session was to explore effective ways to connect early-stage venture capital and technology-based start-ups within European innovation ecosystems to ensure that smart ideas become businesses.

The session focused on the challenges, difficulties and barriers in accessing financial facilities by the technological start-ups. Some financial barriers have been analysed like the policy regulation, inadequate financial infrastructure, informational barriers and lack of management skills.

1.1 Presentations by the panellists

(a) **Asier RUFINO**, Managing Director, TECNALIA Ventures

Mr Asier Rufino presented the main TECNALIA's entrepreneurial initiatives in order to convert knowledge in GPD. Essentially they valorise the technological assets achieving an impact in the economy and in the society.

In this context, on 10th June 2014, TECNALIA Ventures launched the Entrepreneurs' Club as a meeting point for persons with entrepreneurial initiatives.

The objectives of the Club are:

- developing "entrepreneurship culture" within TECNALIA and its ecosystem;
- providing different forms of training to learn and develop abilities;
- building up the right teams to enrich and grow business ideas.

The creation of an R&D valorisation Ecosystem is a complex process which involves the following 3 key factors:

- Minds: technology applied to resolve problems that matter;
- Management: entrepreneurial teams willing to convert disruptive technologies into ready to invest business opportunities; and
- Money: seeking to transform technology based investment opportunities in business value and growth.

Mr Rufino explained that valorisation is not just about money, but also about impact that can be generated through technology/knowledge transfer, in terms of economic growth and job creation.

In conclusion, Mr. Rufino presented the start-up policy adopted in TECNALIA in order to help businesses at every stage of their development.

TECNALIA policy for start-up creation recommends, amongst others, the definition of a clear market segment, the building of a well skilled team for the management of the start-ups, and to ensure an adequate capital (Corporate Venturing; BAS; VC; Family Offices).

The presence of a rich network of partners and incentives aligned are important for the European innovation ecosystems. In conclusion, He underlined the fact that, in the technology-based start-up creation, a clear exit roadmap has to be defined for both TECNALIA and the investors.

(b) **Brian GRAVES**, Director of Business Development, Imperial Innovations

Mr Brian Graves described his organisation, the Imperial Innovations, which is one of the leaders in the UK in the field of technology transfer and commercialisation through the structuring of licensing deals and the transfer of intellectual property into newly formed companies. Imperial Innovations was established in 1986 by Imperial College to protect and exploit commercial opportunities arising from the research base of Imperial College, primarily in the fields of science, engineering and medicine.

In general, where Imperial Innovations exploits intellectual property generated at Imperial College, net distributable revenues are shared 50/50 between Imperial Innovations and Imperial College.

A significant proportion of net revenue from commercialisation is shared directly with the inventors, their faculty and the Imperial College. Where the technology goes into a spinout company, the inventors can choose to receive shares in that company, and may also benefit from consultancy.

Mr Brian Graves pointed out the importance of some key drivers for a successful innovation ecosystem, such as an appropriate legislation, lower global cost and greater availability of capital and good leadership skills.

Legislation and government policy can in fact, under certain circumstances, be a great stimulus to innovation and entrepreneurship. Imperial College is funded by European Union and UK government grants. Any change in the government R&D funding public policy may have effects and important impact on the research results generated by Imperial College and consequently on the amount of its intellectual property.

The most of the capitals for entrepreneurship come from Corporate, Venture and Patient capitals and from other several financial instruments such as Poc funds, seed funds, matched grants, business angels.

Imperial Innovations makes also direct investments in Spin-out companies, provided that the following conditions are met:

- an experienced board, involving at least one non-executive director who is selected by Imperial Innovations;
- financial controls and responsible financial management;
- a clear reliable and commercial business plan.

(c) **Alvaro Simon DE BLAS**, Director, European Business & Innovation Centre Network

European Business & Innovation Centre Network (EBN) is an established not-for-profit international association of incubators, innovation centres, clusters and other intermediaries who help innovative start-ups and SMEs develop their innovative businesses.

Mr Alvaro Simon De Blas underlined that there is a strong reluctance of Spain ecosystem to fund and develop the scientific research inventions, because of the lack of long term investments in early stage and innovative companies. Another barrier in accessing financial facilities by technological start-ups is due to the anachronistic legislation and the lack of unified laws.

He considered Innovative Public Procurement as a tool to stimulate innovation and to improve the effectiveness and efficiency of public services.

Further, Mr Alvaro Simon De Blas strongly recommended new public co-investment instruments, as for example the Neotec programme by Spanish CDTI, the re-balancing of the relationship between University basic and applied research and the re-designing of new fiscal policies (as R&D tax reliefs).

In conclusion, Mr Alvaro Simon De Blas suggested to further strengthen the role of the European Business Innovation Centres (BICS) and to improve the synergies among all the key players in innovation and business ecosystem.

(d) **Douglas T. HICKEY**, Ambassador and Commissioner General of the USA Pavilion at Expo Milano 2015

Mr Douglas T. HICKEY was named Commissioner General of the USA Pavilion at Expo Milano 2015 by President Barack Obama in 2014. He spent 10 years as managing director of Hummer Winblad Venture Partners, one of Silicon Valley's leading Venture Capital firms. Prior to Hummer Winblad, Hickey was CEO of Critical Path and President and CEO of Global Center. After selling Global Center to Frontier Communications, Hickey was named president of Frontier Global Center and Executive Vice President of Frontier Communications Corporation. Hickey also served as president and CEO of MFS Datanet. He was a member of the National Finance Committee for President Obama's campaign in 2008 and 2012 as well as Co-Chair of the California Finance Committee.

During the meeting, the Ambassador Douglas T. Hickey presented his experience in funding and creating start-ups in USA. He highlighted that in Europe there are all the conditions for a strong entrepreneurship system and to attract new capitals. Europe has high level academic and technical educational systems, extraordinary brains and creativity, brilliant engineers and designers, skilled managers and excellent research results, but at the same time, He saw also that European people have often a low self-confidence, which may inhibit business initiatives and technology based start-ups creation.

(e) **Javier ECHARRI**, former Secretary-General at EVCA – European Private Equity and Venture Capital Association

The European Private Equity and Venture Capital Association (EVCA) was established in 1983 and is based in Brussels. EVCA represents the European private equity sector and promotes the asset class both within Europe and throughout the world. With over 1,300 members throughout Europe, EVCA's role includes representing the interests of the industry to regulators and standard setters, developing professional standards, providing industry research, organising professional development initiatives and forums, as well as facilitating interaction between its members and key industry participants. These key players include institutional investors, entrepreneurs, policymakers and academics. EVCA's activities cover the whole spectrum of private equity: venture capital (from seed and start-up to development capital), buyouts and buyins.

Mr Javier Echarri opened his presentation underlining the importance of a good corporate governance for the Early-Stage Technology start-ups. He explained that private equity and venture capital industry have been very active in developing corporate governance standards in unlisted companies in the last two decades.

He mentioned that EVCA has developed guidelines for the management of privately held companies in the private equity and venture capital industry.

The guidelines can be downloaded at the following link:

http://www.ecgi.org/codes/documents/evca_corporate_governance_guidelines_2005.pdf

Mr Javier Echarri also emphasized the important role of the private equity and venture capital investors in setting the initial strategy of the technology-based start-ups, through its board representation or through the exercise of shareholder voting.

In conclusion, Mr Javier Echarri proposed public-private efforts in Europe aimed to improve the conditions for foreign investments and to strengthen the investor confidence in the European innovation ecosystem.

1.2 Conclusions

During the session have been explored several entrepreneurial initiatives focused to valorise the technological assets and to boost the economic development and the growth in the society.

The panellists agreed that start-up creation needs, amongst others, the definition of a clear market segment, the building of a well skilled team for the management, and an adequate capital (Corporate Venturing; BAs; VC; Family Offices). Private equity and venture capital industry have a very active in technological start-ups creation. The panellists strongly believe that legislation and government policy can be, under certain circumstances, a great stimulus to innovation and entrepreneurship.

Some barriers in early stage start-ups creation have been identified, which are the long term return of the investments, the difficulties in accessing to financial facilities and some anachronistic legislations in some European countries.

The panellists agreed also that private equity and venture capital investors should play an active part in setting the initial strategy of the technology-based start-ups, through its board representation or through the exercise of shareholder voting.

In their concluding remarks, the panellists emphasized the important role of public intervention in fostering the creation of technology-based start-ups in innovation ecosystems.

Session 2: Synergies among EIT and TTOs strategies in technology based start-up generation

Moderator

- **Piyush UNALKAT**, Head of Technology Transfer Investments, European Investment Fund

Speakers

- **Elena BOU**, Director, KIC InnoEnergy Innovation
- **Andreas BENKITSCH**, KIC Raw Materials
- **Sergio BANDINELLI**, TECNALIA Ventures
- **Talita SOARES**, European Association of Research and Technology Organizations, EARTO
- **Lluc DIAZ**, European Space Agency, ESA
- **Mike CHERRETT**, Director of Operations, Climate-KIC
- **Pär JOHANSSON**, KIC Raw Material Entrepreneurship platform

Editor

- **Annarita FERRERI**, Technology Transfer Officer, Directorate-General Joint Research Centre, European Commission

Abstract

Growing demand for innovative products and services, and a gap in the market of technological SMEs that can address these needs, need players in the system, which are prepared to play a critical role in managing both short-term and long-term imbalances

The European Institute of Innovation and Technology (EIT) is an independent EU body. Its mission is to enhance Europe's ability to innovate by nurturing entrepreneurial talent and to try to overcome the fragmented European innovation landscape. Collaborating with RTOs is a natural step, as they are the cradle of much scientific and technological innovation, as well as human capital. Indeed many members of the TTO Circle are already active members of the EIT Knowledge and Innovation Communities, instruments intended to foster innovation eco-systems.

The session focused on the question of how best the EIT and the TTO Circle could collaborate in the domain of technology based start-ups creation, by exploring synergies among their strategies and addressing open question marks.

Several dimensions of the current status-quo and future needs were assessed. The discussants elaborated on the current challenges and a possible way forward.

2.1 Presentations by the panellists

(a) **Piyush UNALKAT**, *Head of Technology Transfer Investments, European Investment Fund*

The European Investment Fund provides risk financing to stimulate entrepreneurship and innovation in Europe. Its specific target is to support smart and sustainable growth for the benefit of European SMEs. The EIF aims to achieve this goal, by offering a wide range of targeted products to support SMEs and midcaps, ranging from venture capital to guarantees and microfinance. They work with financial intermediaries across the EU-28 and EFTA countries, candidate and potential candidate countries.

Essentially they help businesses at every stage of their development, from pre-seed funds to first public offering.

The EIF contributes towards creating long-term, sustainable vehicles with like-minded investors. Typically, the minimum critical size of these vehicles is around EUR 30 million and the EIF has the ability to fund up to 50% of it. An essential ingredient of such vehicles is their close ties with research organisations, often via the TTOs; in fact the EIF seek access to good science with commercial potential, but they will not finance research directly.

Their formula for optimum governance prescribes, amongst others, adequate incentives to the management team they prescribe the management team should be properly incentivised; and that shareholders and limited partners in the fund should not be involved in individual investment decisions that the fund makes, to guarantee substantial independence and non-competition from the management team.

(b) **Elena BOU**, Director, KIC InnoEnergy Innovation

Elena Bou presented the work of the KIC InnoEnergy, an alliance of top European players, trying to address the main European sustainable energy challenges through innovation.

The KICs have a global scope and it focuses on European networks and their top-notch players in each discipline (including labs, infrastructure, people). They have set-up one European incubator with 6 entry points. Their intent is to support the entrepreneurs / start-ups and commit to help them secure their first clients for the entrepreneurs / start-ups.

The process involves assisting in the structuring of a business plan adapted to the entrepreneur and a market oriented process supported by first class experts.

They focus on start-ups creation, which is perceived as the most constructive approach to create new jobs, support the economy and develop creative eco-systems, by bringing together the right actors.

Ms Bou strongly believes that RTOs could help to unleash further potential as they represent a source of great talent, extremely innovative research and a fertile ground for thriving start-ups. Indeed the KIC InnoEnergy is now launching a special programme for RTOs to get support in solving some specific energy challenges.

The funding model of the EIT is to take an equity share and a seat on the board; the method raised questions from some of the participants on whether that would be compatible with TTOs, which adopt a similar approach. The conclusion was that a possible topic of common interest could be to further explore together funding mechanisms that could result appealing for both parties.

(c) **Andreas BENKITSCH**, KIC Raw Materials

Mr Benkitsch reminded the attendees that the EIT is the first EU initiative bringing the three sides of the knowledge triangle: higher education, research institutions and business. The EIT-RM comprises more than 100 partners across Europe.

He introduced the concept of two valleys of death, the first one in the pre-demo phase and the second one in the pre-industrial phase. The EIT-KIC on Raw Material applies an initial membership fee to each prospective member, which will then be re-invested in the project. However, it currently cannot fully cover both valleys of death. Therefore they resorted to the creation of an impact fund and investment platform.

The impact fund can easily support the passage from research to demo phase; it has a lower return rate, but it is a more secure investment if the right partners selected. It would still necessitate some extra funding for the second phase of the process, when lack of exposure to investors can be the real show-stopper, even for the most promising start-up. The European Minerals Investment Platform (EUMIP) is currently being developed by EIT-RM with DG-GROW. The target is to bring the start-ups from demo to fully industrial commercialisation, either by involving industry in the investment plan or by opening the opportunity to industry to outsource some research that would otherwise be too costly and time-consuming to develop in-house.

His view is that such funds and platform can be useful schemes for entrepreneurs and TTOs alike. Indeed he stressed the need of TTOs and KICs to collaborate and develop a holistic view of how to overcome such financial hurdles and harmonise their approach to start-up development.

(d) **Sergio BANDINELLI**, *TECNALIA Ventures*

Sergio Bandinelli proposed a different view of the valley of death. For the team in TECNALIA there is a gap in the pool of talent available to lead and manage the spin off/start-up. In technology-based business opportunities, scientists and inventors do not necessarily have the managerial or commercial profile needed in a start-up. Moreover, they often prefer to adopt the CTO role and/or continue with their research activities. Finding the correct team is pivotal for the future of the start-up; any platform that could support the scouting of entrepreneurial talent, would be a key success factor to mobilise even cautious investors. In TECNALIA they also believe in having an open channel of communication with the potential future customers, in order to help to identify the challenges that are most limiting their profitability potential.

The TECNALIA approach is three-fold: search for minds who can use technology to offer a customer value proposition based on the ability to solve large P&L problems to a clearly defined market segment with a global reach; set-up of the correct management team, with entrepreneurial spirit, who is willing to convert disruptive technologies into ready-to-invest business opportunities; and last, but not least, investors, seeking to transform technology based investment opportunities in business value and growth. In fact they prefer to bring the investors in as soon as possible to shape the development process of the product.

In practice they advocate for technology and know-how that are transferred to the spin-off and an executive team employed directly by the spin-off with equity-stock-options-ratchet schemes but no right to return to TECNALIA. Finally they always define a clear exit strategy for TECNALIA (and hence for the investor).

They foster the use of knowledge portfolio. Their main policy is to share best practices, knowledge and expertise. To be able to do so, they establish informal channels of communication with policymakers and organise training programmes. In such a way they can develop common approach towards international standards for the professionalization of technology transfer processes.

(e) **Mike CHERRETT**, *Director of Operations, Climate-KIC and External Partnerships*

The Climate-KIC was created to meet the need to lead climate innovation and ensure Europe benefits from the estimated €5.5 t market for low-carbon technology and services. The vision for 2018 is to be:

- the global leader in climate and sustainable innovation;
- a trusted partner for the best demand side and supply side organisations;
- a centre of excellence, informing, inspiring and empowering the next generation of climate leaders;
- recognised globally as delivering impact.

Their business model is focused on an end-to-end approach that supports, rather than dictates the progress of the work.

They have set-up the Climate Launchpad, a platform for open calls across Europe for start-up ideas and entrepreneurs. It is essentially a Europe-wide accelerator network, ready to develop ideas into businesses. (climate-kic.org/for-entrepreneurs/).

They also foster urban innovation with open calls for cities to join Smart Sustainable Districts programme – a scheme for climate market creation opportunities open for built environment, land use and sustainable production.

Mr Cherrett stressed that many RTOs of the TTO Circle are already members of some KICs and it is his strong belief that further cooperation will bring more benefit to all

partners and will advance the mission to support new start-ups. He therefore encouraged members to open even further the dialogue with the EIT to identify common goals and a common roadmap.

*(f) **Pär JOHANSSON**, KIC Raw Material Entrepreneurship platform*

EIT Raw Materials' mission is to overcome the challenge of raw materials dependence, and to transform it into a strategic point of strength for Europe. They aspire to boost the competitiveness, growth and attractiveness of the European raw materials sector, via radical innovation and entrepreneurship. This KIC integrates multiple disciplines, diversity and complementarity along the three sides of the knowledge triangle (business, education and research) and across the whole raw materials value chain.

They outlined a platform roadmap for enterprise architecture, where they foresee the following steps.

First of all, they identify the specificities of each raw material sector, defining the prevailing business models and existing value chains. They advocate to "Learn from the best!", in other words, absorb tested concepts and adapt them to the specific of each situation. It is also important to maintain a clear customer vision, and gain insights into customer needs by engaging with them. In this way the KIC Raw Material has access to entrepreneurs, start-ups and SMEs. They can provide assistance via the Entrepreneurial Support Service Organisations (TTOs/Incubators/SME support organisations etc.). From this point of view, a close collaboration between RTOs and the EIT can be beneficial to both parties, due to the increased exchange of talent and knowledge.

2.2 Conclusions

A number of prospective opportunities for collaborations emerged in the general discussion. Several participants argued that the KICs have operated so far as silos, and an increased collaboration and exchange of best practices among the KICs could support their very mission. Mr Cherrett of EIT stressed once again that the KICs were launched recently and they are still defining their correct *modus operandi*. He welcomed the suggestion of increased intra collaboration between the KICs, but also reasserted that there is a lot potential for the KICs and the RTOs to work together and design a common value chain for the development of a successful eco-system for the European start-ups.

It was also mentioned that collaboration should be sought on methods to inject more trust in investors and increase the financing in-flows. Several participants highlighted the need for coordinated policies and greater transparency.

One last remark was made by CEA, who invited to reflect on the funding methodology of the KICs – share option in the start-up – as this might be, at times, difficult to accommodate for a start-up emerging from a RTO where a similar approach might have been adopted. The entrepreneur would risk diluting excessively his own share in the company.

Session 3: Start-up creation and entrepreneurship

Moderator

- **Ian Tracey**, Knowledge Transfer Network (KTN)

Speakers

- **Elena ANDONOVA**, Consultant at ISIS Enterprise
- **Lorenz KAISER**, Division Director for R&D Contracts and IPR at Fraunhofer-Gesellschaft
- **Matthias KECKL**, Head of Fraunhofer Venture Lab team
- **Thorsten LAMBERTUS**, Innovation Manager at Fraunhofer Venture Lab
- **Hans BOUMANS**, Technology Transfer Manager at TNO
- **Jean-Charles GUIBERT**, Director of the Technology Transfer at CEA
- **Asier RUFINO**, Managing Director at TECNALIA Ventures

Editor

- **Sergio GRANDE**, Technology Transfer Officer, European Commission's Joint Research Centre (JRC)

Abstract

Spinoff is a route to transferring a result of the research and inventive efforts of scientists and researchers. Spin-Offs from the public and private sectors play an important role within the innovation system by:

- Bridging the gap between invention and the market: Public Research-based Spin-Offs develop inventions that can be introduced into the market;
- Commercialising innovation: Corporate Spin-Offs derive their competitive advantage from bringing innovative products and processes to commercialisation; and
- Inducing knowledge-based entrepreneurship, thus contributing to competitiveness and renewal of the innovation system.¹

The session "**Start-up creation and entrepreneurship**" was dedicated to presenting the TTO circle members' initiatives in fostering start-up creation and entrepreneurship. Speakers from 5 European Research Organizations (ISIS Enterprise, Fraunhofer-Gesellschaft, TNO, CEA and TECNALIA ventures) presented their experiences in fostering the start-up creation and entrepreneurship within European innovation ecosystems.

This session was structured as a round table with a sequence of 5 minute slide presentations. The moderator of the session was Mr. Ian Tracey, Head of Access to Funding & Finance at The Knowledge Transfer Network.

3.1 Presentations by the panellists

(a) **Elena ANDONOVA**, Consultant at ISIS Enterprise

Ms Andonova opened her presentation, describing the strategy to foster the start-up creation at Isis Innovation Ltd, which is a successful company owned 100% by the University of Oxford. In the last financial year, 529 licenses and 5 start-ups were completed at Isis Innovation Ltd.

Ms Andonova additionally underlined that only an integrated approach to entrepreneurship support can have a successful impact on the start-up creation, which includes provision of mentoring and coaching, work space,, conferences, networks, joint programmes, pitch competitions workshops and lecture series, as well as ad hoc advice and professional services. It demonstrates that actions to foster start-up creation, requires intensive and effective use of financial and human resources.

Furthermore, Ms Andonova described the facilities of the Oxford incubators & science parks and in particular focused on the Bio-Escalator, which is currently being developed, a hub for the commercialisation of bioscience and medical research and innovation in Oxford. Bio-Escalator is planned as a a meeting point for entrepreneurial researchers, clinicians, medical entrepreneurs and a wide range of bioscience companies.

Subsequently, Ms Andonova presented some of the most relevant investments, donations and other start-ups funds at ISIS Innovation Ltd, which are:

- Oxford University Challenge Seed Fund, in order to support development of new technologies from Oxford (Over £7.5m invested in 143 projects);
- Oxford Invention Fund (£1.5m raised to date): through this fund, Oxford strives to ensure that smart ideas will be developed to a stage where they can be transferred from the University to business;

¹ Corporate and Research-based Spin-Offs: Drivers for Knowledge-based Innovation and Entrepreneurship, Proceedings Of The Expert Workshop Held In Brussels, 18 January 2001, Pietro Moncada-paternò-castello (JRC-IPTS).

- University of Oxford Isis Fund (UOIF), which offers alumni and investors the opportunity to invest in spin-out companies developing and commercialising technology and intellectual property (IP) from the University of Oxford, in a tax-efficient manner;
- Spin-Out Investment Fund (£320m), which is dedicated to new and existing spin-out companies. This fund was created in conjunction with external and financial investors like Invesco, IP Group, Lansdowne Partners, Oxford University Endowment Fund, the Wellcome Trust, Woodford Investment Management, Google Ventures and Sir Charles Dunstone.

In conclusion, Ms Andonova presented the successful story of Onfido, which is a start-up founded in 2012 by three entrepreneurs from Oxford University.

Onfido delivers next-generation identity verification and background checks, helping businesses verify anyone across the world within seconds. Onfido has received over \$30m in funding to date. Today, Onfido works with over 1,000 clients globally, including BlaBlaCar, Deliveroo and JustGiving.

(b) **Lorenz KAISER**, Division Director for R&D Contracts and IPR at Fraunhofer-Gesellschaft - **Matthias KECKL**, Head of Fraunhofer Venture Lab team - **Thorsten LAMBERTUS**, Innovation Manager at Fraunhofer Venture Lab

Mr Kaiser, Mr Keckl and Mr Lambertus have jointly presented the Fraunhofer's initiatives in fostering start-up creation and entrepreneurship. Mr Kaiser introduced the Fraunhofer-Gesellschaft Institute, which is the largest organization for applied research in Europe. In 2015, 24 new spin-offs were created at Fraunhofer-Gesellschaft Institute (8 Spin-offs with investment and 16 Spin-offs without investment). More than 50% of spin-offs are financed by venture capital. Mr Kaiser underlined also the low insolvency rate of the new companies (<10%) during the entire period of investment.

Mr Kaiser emphasized the critical role of the start-up ecosystem, underlining that networking and cooperation between Fraunhofer institutes and spin-offs is essential for the survival and the growth of new spin-offs, in particular in the early years of their life.

Mr Keckl presented the project "fostering intrapreneurship" started in August 2013 and funded by the German Federal ministry of research. The main goal of this project was to develop an entrepreneurial mind-set within Fraunhofer finalised to create new spin-offs. As a result, more than 25 new spin-off projects were created and over 800 Fraunhofer researchers attended a number of Fraunhofer Venture Lab's entrepreneurship initiatives to bring innovations to market (Business planning and legal support, investment management, tailored business ideation, F-days and specific training on entrepreneurship for researchers and executives).

In addition, Mr Lambertus described the Fraunhofer venture Lab's early stage initiatives focused on bridging the gap between daily technology development at the 66 Fraunhofer Institutes and central incorporations of new enterprises. In addition, Mr Lambertus highlighted the fact that fostering intrapreneurship is much better than entrepreneurship, at least in early innovation phases. Finally, he presented the offline-online-offline approach adopted at FRAUNHOFER VENTURE LAB, underlying also the importance of first testing business ideas with a few pilot Institutes before launching them.

(c) **Hans BOUMANS**, Technology Transfer Manager at TNO

Mr Boumans presented the project TekDelta, a joint initiative of public and private R&D organisations and the Dutch start-up ecosystem, which aims to boost the creation of new start-ups and the expansion of existing high potential Dutch tech start-ups. This project links together Dutch Universities and campuses (Delft University of Technology, Eindhoven University of Technology, Kennispark Twente), knowledge institutes (TNO, ECN), corporates (KPN, NXP, Philips) and start-up support organizations (YES!, Delft, HealthValley, Rockstart, Venture Café, Start-upAmsterdam, Start-up Amsterdam and LabForRent).

Mr Boumans described also the community and deal platform for start-ups named F6S, which has over 1.2 million free members. In particular, Dr Boumans presented the profile of the TEKDelta's technologies at the F6S platform. Finally, Mr Boumans presented the successful tech transfer case of the DriftLess™ technology, which allows highly-accurate location and direction determination. DriftLess™ was developed within TNO Defense, Safety and Security for military applications. Dr Boumans remarked that Driftless™ has been licensed exclusively eight times in several fields of use, such as extreme sports, Forklifts and non-military unmanned aerial vehicles.

(d) **Jean-Charles GUIBERT**, Director of the Technology Transfer at CEA

Mr Guibert briefly introduced the French research strategy in terms of its competitiveness, environmental and societal challenges. He strongly believes that Knowledge transfer to businesses is at the heart of the innovation capacity of a country and that company creations play a fundamental role in the productive dynamics of modern economies.

Mr Guilbert described the start-up creation process at CEA, which involves the maturation phase (6-24 months), the incubation phase (9-18 months) and finally the investor phase after start-up creation (12-36 months). 124 start-ups were created at CEA since 2000.

Several specific services to support business creation at the CEA have been developed, for example the support for wages during the incubation period (3 - 6 months max) and personal loans of up to 40 000 EUR.

Mr Guibert also emphasized the strategic role of the seed funding in the start-up creation. In particular, he presented the two companies entirely devoted to financing of innovative companies linked to public research at CEA: CEA ATI (38 M€) and CEA Investissement (27 M€).

Some examples of CEA's start-ups were shown.

Lastly, some key performance indicators (KPI) to assess the start-up creation within an innovation eco-system were presented, for example the number of start-up created over a period of time, the share in the equity capital of a company, the number of employees in start-ups, the mortality and casualty rates on society, the turn over, the acquiring rate of start-up, the redemption rates and age of the start-up, the total amount of investors fund raised.

e) **Asier RUFINO**, *Managing Director at TECNALIA Ventures*

Mr Rufino opened his presentation shortly describing TECNALIA's portfolio of participated Companies, which includes 250 employed professionals, 30 M€ of overall annual turnover and 12 spin-off companies. He remarked that for reasons of manageability, TECNALIA prefers to have a limited number of start-ups (not more than 15).

Mr Rufino also emphasized the important role of the start-up ecosystems, which are generally defined by the network of interactions among people, encompassing researchers, investors, managers, service providers, advisory & mentoring organizations and other facilitators.

Markedly, he noted that sometimes the interaction among the aforesaid group of people is difficult due to conflict of interests. Entrepreneurs and Investors, for example, have two diverging interests: the Entrepreneurs willing to convert disruptive technologies into ready-to-invest business opportunities, while the investors seeking to transform technology based investment opportunities in business value and growth.

In concluding, Mr Rufino explained that TECNALIA Ventures not only manages the incubator of business opportunities but also provides dynamic activities in fostering the links between the companies, the local and international ecosystems for entrepreneurship.

3.2 Conclusions

In their concluding remarks, the panellists noted that the Impact of start-ups and their socio-economic contributions are more important than the number of start-ups created.

It was also underlined that there are already good examples of how organisations support start up creation and therefore Europe needs to leverage on these examples and strengths. Organisations involved in providing support to start-up companies need to think not only about helping those companies raise funds, but also in client acquisition and general business support. Further it is essential to connect own start-up and entrepreneurship efforts with partners from local and international ecosystems.

Lastly, it was remarked that there is no 'one approach' for all TTO's to develop entrepreneurship but that every TTO has to keep in mind the special organizational frame and culture.

PROGRAMME

26 May 2016

Chair: **Giancarlo Caratti**, Head of Unit, IP and Technology Transfer, Directorate-General Joint Research Centre, European Commission

08:30 – 09::00 Registration and welcome coffee

09:00 - 09:30 Welcome address

Estíbaliz Hernández, Vice-Minister for Technology, Innovation and Competitiveness, Basque Government

Iñaki San Sebastián, Managing Director, Tecnalia Research & Innovation

Giancarlo Caratti, Head of Unit, IP and Technology Transfer, Directorate-General Joint Research Centre, European Commission

09:30 - 11:00 Keynote speech

Jean-David Malo, Head of Unit, SME's, Financial Instruments and State Aid, Directorate-General Research and Innovation, European Commission

Shiva Dustdar, Head of Division Innovation Finance Advisory, EIB

Michał Gorzynski, Head of Monitoring Section/ Innovation Officer, EIT, European Institute of Innovation & Technology

Jeff Skinner, Executive Director, Deloitte Institute of Innovation and Entrepreneurship

11:00 - 11:30 Coffee break

11:30 - 13:30 Connection of early stage smart investors with technological start-ups in entrepreneurship ecosystems

Round table: Opportunities and Challenges, barriers and synergies

Moderator: **Luis Sanz**, Director-General, International Association of Science Parks and Areas of Innovation (IASP)

Rapporteur: **Sergio Bandinelli**, Business Development Manager, Tecnalia Ventures

Douglas T. Hickey, Ambassador and Commissioner General of the USA Pavilion at Expo Milano 2015

Asier Rufino, Managing Director, Tecnalia Ventures

Javier Echarri, former Secretary-General at EVCA - European Private Equity and Venture Capital Association

Brian Graves, Director of Business Development, Imperial Innovations (tbc)

Alvaro Simon De Blas, Director, European Business & Innovation Centres Network

Questions / Debate / Conclusions

13:30 - 14:30 Networking lunch

14:30 - 16:30 Technological start-ups creation: Synergies among EIT and TTOs strategies

Round table: Opportunities and Challenges, barriers and synergies

Moderator: **Piyush Unalkat**, Head of Technology Transfer Investments, European Investment Fund

Rapporteur: **Annarita Ferreri**, Technology Transfer Officer, Directorate-General Joint Research Centre, European Commission

Elena Bou, Director, KIC InnoEnergy Innovation

Andreas Benkitsch, Chief Financial Officer, KIC Raw Materials

Sergio Bandinelli, Business Development Manager, TecNALIA Ventures

Talita Soares, Senior Policy Officer, EARTO

Lluc Diaz, Technology Transfer Engineer, the European Space Agency (ESA)

Mike Cherrett, Director of Operations, Climate-KIC

Pär Johansson, Coordinator, KIC Raw Material Entrepreneurship platform

Questions / Debate / Conclusions

16:30 - 17:30 Visit TecNALIA premises and labs
Adjourning to the second day of the meeting

20:00 - 22:00 Reception and dinner

27 May 2016

Chair: **Giancarlo Caratti**, Head of Unit, IP and Technology Transfer, Directorate-General Joint Research Centre, European Commission

08:30 - 09:00 Registration and welcome coffee

09:00 - 10:30 Start-up creation and entrepreneurship

Moderator: **Olga Spasic**, Head of the Innovation Structures Section, WIPO

Rapporteur: **Sergio Grande**, Technology Transfer Officer, Directorate-General Joint Research Centre, European Commission

Elena Andonova, Consultant, ISIS Enterprise

Start-up creation and entrepreneurship: the ISIS Enterprise Experience

Lorenz Kaiser, Division Director for R&D Contracts and IPR, Fraunhofer-Gesellschaft

Matthias Keckl, Head, Fraunhofer Venture Lab team

Thorsten Lambertus, Innovation Manager, Fraunhofer Venture Lab

Fostering the entrepreneurial thinking: new approaches at Fraunhofer

Hans Boumans, Technology Transfer Manager, TNO

TekDelta: connecting high tech innovations to the startup ecosystem

Jean-Charles Guibert, Director, Technology Transfer, CEA

Key performance indicators for an innovation eco-system

Asier Rufino, Managing Director, TECNALIA Ventures

TECNALIA's initiatives in fostering start-up creation and entrepreneurship

10:30 - 11:00 Coffee break

11:00 - 11:15 Meeting wrap-up

Rapporteurs of the sessions

11:15 - 12:15 Discussion of progress and future activities of TTO-Circle

Alessandro Fazio, Policy Officer, Directorate-General Joint Research Centre, European Commission

12:15 - 12:30 Concluding remarks

Asier Rufino, Managing Director, Tecnalia Ventures

Giancarlo Caratti, Head of Unit, IP and Technology Transfer, Directorate-General Joint Research Centre, European Commission

12:30 Closing lunch

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